

CALIFORNIA AND WESTERN MEDICINE

VOL. XXIII

NOVEMBER, 1925

No. 11

HOW TO MAKE A DOCTOR

AN UNUSUAL SYMPOSIUM ON THE ESSENTIALS OF MEDICAL EDUCATION

By PRESIDENT RAY LYMAN WILBUR, M. D., *Stanford University*; WILLIAM ALLEN PUSEY, M.D., *Former President American Medical Association*; DAVID A. STRICKLER, M. D., *President Federation of State Medical Boards*; N. P. COLWELL, M. D., *Secretary Council on Medical Education and Hospitals, American Medical Association*; FREDERICK C. ZAPFFE, M. D., *Secretary Association of American Medical Colleges*; J. S. RODMAN, M. D., *Secretary National Board of Medical Examiners*; WILLIAM OPHULS, M. D., *Dean Stanford University Medical School*; L. S. SCHMITT, M. D., *Acting Dean University of California Medical School*; PERCY T. PHILLIPS, M. D., *President California Board of Medical Examiners*, and PERCY T. MAGAN, M. D., *Dean College of Medical Evangelists. With an introduction by the Editor of*
CALIFORNIA AND WESTERN MEDICINE

INTRODUCTION

By WILLIAM EVERETT MUSGRAVE, *Editor*

AT THE 1924 session of the Association of American Universities, President Ray Lyman Wilbur delivered an address on "Maintaining Standards Without Excessive Standardization." This address forms the basis of the following remarkable symposium, written in the order in which it appears. All discussants, therefore, had before them not only a copy of the original address, but in addition what each preceding discussant had said. This symposium, therefore, is no mere extemporaneous ramble, but represents the deliberate conclusions of a galaxy of medical teachers upon a vital problem not heretofore brought together in such consecutive order. Sustained and prolonged but unsuccessful efforts were made to secure the co-operation of President W. W. Campbell, University of California. All others who were invited lent their enthusiastic co-operation.

DOCTOR WILBUR, in his original address, which is too long to reproduce in full, said:

"'Maintaining standards' were the words that symbolized academic arrival a few short years ago. Now the very word 'standard' brings with it a sense of reproach because, in the efforts arbitrarily to force certain standards upon education, the life juices of intellectuality and initiative were being squeezed out and the divine right of the human to be different and yet achieve success was in danger of being denied in the very place where advance comes best with a large measure of freedom."

"The attempt to measure results and to make choices and yet remain responsive to new ideas, new discoveries and new methods of instruction has tangled our whole educational scheme, particularly when, as in medicine, legislation, with its crippling and crystallizing tendency, has entered the field. Parrot teaching where the fountain pens of the student reproduce the record, often an old one of the teacher, flourishes where set standards, set examination questions and conscientious but unimaginative examiners keep up the bars against the unfit."

"The history of medical education during the past quarter of a century offers an unusual illustration of the losses and gains possible with the projection into a field of science and into a profession of educational standards based upon new ideals and new demands."

"With the adoption of the standard curriculum through the efforts of the American Medical Association there developed a nationwide inspection of the facilities of medical schools and the methods used in instruction. Standards were set up for equipment, laboratory space, number of beds and out-patients per student, etc."

"At the same time a general movement for an improvement in the legislation of the various states in connection with medical practice brought about the adoption of medical practice acts with very definite

required standards set up in the law. These were administered largely by boards made up of men belonging to the profession. In a number of states the standards set by the Association of American Medical Colleges became automatically the standards of the state for those obtaining a license to practice medicine and surgery, and a unique situation was developed by which, when the Association of Medical Schools had joined in a common action regarding the curriculum, it became the law in certain of the states. Throughout this whole quarter century there was a steady advance in science, in the field of medicine, and a complete revolution of viewpoint in the teaching and in the practice of medicine."

"The medical curriculum, although practically confined within the limits of four years, took on in a number of schools a fifth or intern year. The absorption of practically all the time of the student in set tasks was most unsatisfactory. The medical student upon graduation was gorged with the stuffing he had received, but was not ready for the actual practice of medicine. At the same time medical faculties found themselves teaching to meet the requirements of state board examinations. They found it necessary to keep up a certain number of schedule hours in subjects that no longer needed emphasis in the undergraduate medical work because of the legal requirements. The Frankenstein of medical standards, built with so much enthusiasm and devotion to ideals, began to destroy individual initiative and to stand in the road of progress, bringing stasis in a stream in which ever more rapid motion was necessary."

"Subjects once introduced, although perhaps of decreasing importance, still had their adherents. The tenacity of the teacher in hanging on to all that he can get of the student's time is one of his most laudable but troublesome traits. The dead hand of the past maintains a strangle-hold on the curriculum. What has been must always be until in the usual faculty wrestling match the new wins a foothold."

"The handling of the pre-medical requirements, as well as those of the medical school, became one largely of figures. Addition of numbers with proper titles and to obtain proper totals became the object of deans everywhere. That this method had its ridiculous side was evidenced when the osteopathic and other similar schools were found capable of multiplying and adding faster before legislative committees in presenting curricula of their schools than could the so-called regular schools. Standards had resulted in a situation where quantitative measures became predominant. The cubists in medical training began to find a ready opening for short-cuts and to insist that theirs was the real art and that fundamental training in anatomy, etc., belonged to the past."

"We cannot say that this situation has passed, but there are evidences of a change in viewpoint. There is an increasing effort to diminish the number of actual required schedule hours, a willingness to put forward optional and elective courses and an earnest effort to reduce the work of the medical curriculum to the more fundamental subjects, leaving the specialized or more technical ones for work

beyond the M. D. degree. More choice and less imposition is now the tendency."

"It seems to me that it is quite clear that the basis of university and professional training should be one of maintaining standards. The great difficulty is to define these standards and not to consider standards, quality and progress as synonymous terms. Choices in every field of education are difficult, and choices made by the teacher of the material in the subject in which he is interested for the instruction of students becomes of paramount importance. When these choices must be made upon an artificial basis because of some requirement which the student must eventually meet, we have interfered materially with the individual initiative and possible inspiration of the teacher concerned. It is particularly because of this that required set standards demanding absolute fact knowledge or knowledge of technique should be kept down to the absolute minimum."

"Since, if we are to maintain standards without overstandardization, we must enhance the quality of the work, magnify the initiative of the teacher and enlarge the capacity of choice by the student, we must at the same time have some solid form of examination of a character to test the ability of the student to carry on in the work which he has begun, rather than a mere memory test. It is inevitable that such examinations should be insofar as possible of a practical character and that they must be prepared by those who are at the top, the greatest experts; those who view their particular fields from the standpoint of fundamental principles, rather than of the class so prone to make out examination papers who seek for exact information in the more minute forms of knowledge. The full advantage can only come if the teaching profession of the country agree to do less work for their students."

"In building our academic structure of standards we should think in terms of stresses and strains, rather than merely visualize a more or less decorative bric-a-brac. Standards evolved by joint action of those best informed are essential for the development of students, for the protection of teachers with an excess of initiative, and for the advance of education and science in civilization. Standards set by those with high ideals are needed in every domain where knowledge is used in practical human affairs."

"In concluding may I suggest the following procedures as worthy of some thought:

- "1. Reduce rigid requirements radically.
- "2. By careful studies by experts outline central core of essential parts of required subjects.
- "3. Insist that every college student shall take at least one subject where he can obtain facts firsthand.
- "4. Hold the student to solid achievement in tasks once undertaken.
- "5. Increase the number of set papers required of students to stimulate individual work.
- "6. Provide a marking system which will serve as a basis of self-valuation to the student.
- "7. Make calendar consumption secondary to actual achievement.
- "8. For admission to the university there should be required:
 - (a) A record of scholastic achievement.

(b) The passing of an intelligence test appropriate for a student who has covered the high school period.

(c) A record of the personal qualities of the student, physical, mental and, if possible, moral. Some form of character test is particularly required.

"9. Provide a comprehensive examination at the end of the sophomore year along the lines of the college entrance board examinations, covering any four subjects, in order to test the student's capacity to go beyond elementary college work. This will provide for the gradual unfolding of the American university, beginning with the junior year, and for the development of the necessary junior colleges, and will also serve as a standardizing device in the acceptance of transfer students and of students whose courses have been irregular.

"10. The standard for the degree of doctor of philosophy should be so changed that the recipient of that degree should be freed from the necessity of taking set courses of any kind during the latter part of his work. It should be a degree conferred upon one who has done original research. Standardization of this degree so that its recipient reads certain languages and has covered certain minors and majors is a mistake. The departments recommending candidates for this degree should take full responsibility for them.

"11. *Degrees in engineering, medicine and law, once granted by a reputable university, should serve as a basis for admission to practice before the public in the domain in which the university has given certification. Those who wish to practice these professions, and who are not graduates of recognized universities, should be required to take examinations under the auspices of the state universities. The setting up of examining boards, while advantageous in many ways, has reached a point where it handicaps the development of the professions more than it helps. Either the boards must change their type of examinations, making them of a practical character, or some other device must be found to free the universities and their professional schools from the narrowing influences of rigid legal standards in the field of education.*"

These abstracts from correspondence between President Wilbur and the Editor have a pertinent bearing upon the discussion:

DR. WILBUR TO THE EDITOR—"It seems to me that with the transfer of medical education over to the universities of the country the time has now been reached when the degree of Doctor of Medicine should be protected by the universities rather than be associated with all the fads and isms that have to be recognized by state legislatures in setting up boards of medical examiners. My personal feeling is that the universities ought to assume this responsibility, that they can carry it on better than anyone else, and that through them we can get a distinct line drawn between the holders of the degree of Doctor of Medicine and all the others who make attempts of one sort or another to treat the sick."

THE EDITOR TO DR. WILBUR—"There is one point upon which I am not clear as to your meaning and that is, whether or not the assumption of educational ability by the state universities would be the limit of their responsibility and their work, therefore, auxiliary to the Board of Medical Examiners, or whether you intended to suggest that all of the duties and responsibilities relating to license, discipline and control and law enforcement in general, should be undertaken by the university with elimination of the Board of Medical Examiners."

DR. WILBUR TO THE EDITOR—"In the development of medical education in the United States the universities have assumed the responsibilities of the instruction of medical students. This is more and more true of state universities. *I feel that the M.D. degree should mean ability to practice medicine and that the certification directed by the universities that a man is ready for practice when he has that degree will do more to bring back the art of medicine than anything else.* As you fully realize, the emphasis has been so strongly upon the scientific side that the actual instruction in the methods of actual practice has suffered materially. The very diversion of this responsibility over to a state board of examiners has been often quoted to me as removing the responsibility from the medical faculties. My idea is that the universities, that is the state universities and those with well-established medical schools, should make the degree of Doctor of Medicine as granted by them mean that a man is ready for the *practice of scientific medicine*. I see no reason why they should not certify their men for the practice in the states in which they are located and why the university should not be able to work up reciprocity among the various states with well-established institutions, since the educational institutions are well posted as to the qualifications of their sister institutions. I think, too, that the National Board of Examiners should be brought into this machinery in such a way that it will take care of those with foreign or diversified training and can act as the co-ordinator where the educational standards differ as between the North and the South, etc. I feel that we will still want a board of medical examiners to protect the degree of Doctor of Medicine from encroachment by those who are not fully trained and to protect the public against the illy educated of all sorts who treat the sick. I should be rather inclined to favor a board made up partly of laymen for this purpose so that the statement of trying to control treatment could not be urged against the regular profession. It will be several hundred years, in my judgment, before we are able to develop a point of view on the part of a large part of the public unfavorable to the cure-all type of practice. Men always have wanted to be fooled, and I imagine that many of them will want to be for a long time."

Many years' experience in practice; in teaching, and as dean and executive officer of a fine medical school; hospitals, research institutions and welfare organizations, in extremely trying circumstances, and many more years of reading and editing medical manuscripts, long since has convinced this editor that *the most important things a doctor should know are not medicine at all and are not taught in medical colleges or elsewhere effectively.* These are character, sympathy, industry, charity, patience, economics, the spirit of consecrated service—in a word, *the art of medicine as it was once understood.* Medical students received much of this under the preceptor method of teaching, long since discontinued, *without providing anything to take its place.* To paraphrase: That wholesome mass service is but the lengthening shadow of a man, is particularly true in bedside medicine. It is quite as true with machine-made doctors today as it was in those days when students starved to follow and absorb the personalities of great leaders. It was more the human qualities of the immortal Osler than his scientific attainments that endeared him to his disciples and patients. Fortunately, he was super-endowed with both a knowledge of the humanities and of science. Many able medical teachers of today would be much surprised to know what it is in themselves that particularly and permanently influences the after lives of their students.

William Allen Pusey, M. D., former President American Medical Association—The sugges-

tions of President Wilbur that efforts should be made to free medical education from its strict standardization and increase the responsibility of the universities for the medical education they give are, to my mind, sound and of great practical importance. The important matter in medical education, after all, is that students should be well prepared. Under ideal conditions the proper requirements for the practice of medicine would be that the applicant for license, after character and intelligence, should have the requisite amount of knowledge, skill, and experience. How he obtained his preparation would not be a matter of essential concern. But we are not living under ideal conditions, and I have no feeling that we can go that far at the present time.

I am strongly of the opinion that it would be to the advantage of medical education if responsible high-class medical schools should have the greatest possible freedom in the teaching of medicine to their students. At the present time no such situation exists. Medical education is bound up tight to the specified requirements that have been set up by the various examining boards, largely under our direction. They specify so much of this, so much of that, and so much of the other. We are tied to a formal curriculum which not only allows the universities practically no leeway, but makes no allowance for the varying ability of students. It would conduce to the improvement in the quality of medical teaching and in medical education if we could give our students to the universities and tell them, turn them out properly prepared; how you do it is your affair.

I am entirely in accord with President Wilbur's suggestion that responsible institutions of proper standing might very well be permitted to certify their graduates to the licensing boards of their respective states and have these students accepted for license on that basis alone. That, however, is a course that is open to great abuse, as shown by our experience before thirty years ago, when medical schools practically owed their existence in many cases to the fact that their diplomas were accepted as a license to practice. It would be a matter for the individual states. If this privilege were confined to institutions of high standing it might very well strengthen the licensing situation by the effect it would have upon the licensing boards; and that is an exceedingly important matter. Medical education would be on a pretty sound basis if we got away from formalism and standardization and if the candidate for the license knew that all that would be required of him would be for him to show unquestioned competency to begin practice. It would give the able student his opportunity. It would supplant time standards, which are so expensive and so uncertain, by quality standards which are the only proper measure. It would open up to medical schools opportunity for initiative, originality and, as a consequence, progress.

In short, I believe President Wilbur's suggestions are steps in the direction of real progress in medical education which we should follow as rapidly as we are equal to them.

David A. Strickler, M. D., President Federation of State Medical Boards—The question as to how far and by whom fixed standards shall be established in the education of medical students, is a broad one involving many problems as viewed from different angles. The primary object of a medical education differs with individuals. Here, as elsewhere in education, there should be some flexibility in the course offered by our worthwhile universities and colleges. *For that large class of medical students who have as their primary object the practice of medicine, we think the first essential is stability of character, honor and integrity. In no other calling is true manhood more essential.* Two men of equal mental capacity, training and general educational opportunity are in no sense equally safe in the interest of public health or morals if one essays to major surgery or other highly specialized work without adequate technical training, while the other conscientiously prepares himself for his chosen tasks and keeps within his field of preparation. The former from within the medical profession is more dangerous to a community and does more to damn the medical profession than a dozen cultists can do from the outside. From the viewpoint of an administrator of a Medical Practice Act, we hold that for one to hold himself out as a specialist without specific preparation, is to attempt to do what he has no moral right to do, and that such practice bears specifically on the moral character of the applicant, even to the extent of denying him the right to take an examination, because not satisfied as to his good moral character.

Secondly, we would stress a close inter-relationship between study of medicine and its practice throughout the course of training. To have the first four years a disconnected study of science, with two final years devoted to clinical study is, in our opinion, a serious mistake which should not be made.

The student should be taught to constantly associate his studies with their ultimate purpose. *To be so highly trained in pure science and in scientific methods as to lose sight of the individual who is sick, is to lose an influence that the medical profession can ill afford.* I fear our present trend is too strongly inclined toward science and method, with too little thought of the individual needing care. The proper relationship between physician and patient is a complex, not learned from textbooks nor test tubes. *The days of the preceptor held much to be commended that has not been supplied by advanced educational institutions.* There is that something in all of us which demands attention to the ego. If the medical profession fails to recognize it and provide for it, there will always be those of less training in science who will administer to it, because human nature is much the same the world over.

We believe that individualism in our great institutions of learning, like initiative in the student, should be encouraged. That *present-day standardization is a leveling down instead of an upbuilding process. It inhibits initiative and retards progress.* For this reason we think it a mistake for a state to make statutory provisions for any fixed educational standards with required hours on various subjects, as is sometimes done. It should rather be the func-

tion of an educational institution to determine the details of an education which will justify the granting of a degree which it may and can protect; of the state, for purposes of licensure, to require of the educational institutions adequate time and opportunity under favorable conditions before a degree may issue.

A degree granted under these conditions supplemented by an examination, both written and practical, by a competent board of examiners would best meet the needs of the state in the interest of public health.

If the degree of M. D. were properly protected by educational institutions, and if the state insisted that only those who hold such protected degrees may be licensed or allowed to practice medicine, the Board of Examiners might be dispensed with. Unfortunately, none of these conditions holds. The degree is too often meaningless; the state frequently does not require the degree of M. D. for a license to practice the healing art, and the Board of Examiners is incompetent either by virtue of inherent weakness or statutory provisions preventing a thorough and efficient examination.

We know of no panacea for these unfortunate conditions. We suggest, as lines of worthwhile effort, wider discretionary powers to our better educational institutions with better protected degrees; closer supervision by the state of institutions authorized to teach and grant degrees within its domain, more thorough and complete examinations by state boards when necessary; broader recognition of credentials, including well-protected degrees, supplemented by National Board certificates for licensure without examination.

N. P. Colwell, M. D., Secretary Council on Medical Education and Hospitals of the American Medical Association—In his article Dr. Wilbur recognizes the need of certain standards, and points out that they should not be emphasized to the extent of having them substituted for that education and testing which are necessary to ascertain the actual knowledge possessed by the student. He shows that quantity measurements, as indicated by hours, terms, years, etc., should not be permitted to displace the methods and measures by which quality can be determined.

Few people today realize the extremely serious conditions of medical education only twenty brief years ago. In 1900 this country had over half of the world's supply of medical schools and, of the 160 then existing, only two from the standpoint of preliminary education could compare favorably with those in the leading countries of Europe; less than thirty were actually requiring a high school education for admission; a large majority were stock corporations conducted for the profit of their owners; the majority were seriously lacking in teachers, laboratories and laboratory equipment and, finally, only a small proportion had adequate relations with hospitals and dispensaries where clinical material was available which could be used for teaching purposes. The 160 schools varied all the way from those which were out-and-out diploma-mills up to those which were worthy of or possessed recognition around the world. Under such conditions, of

course, it was highly important that fairly definite minimum standards should be established, as was done by some of the more progressive state licensing boards. The establishing, in 1904, of two standards by the Council on Medical Education—one for immediate adoption and the other, the so-called ideal standard, for future adoption—brought tremendous results for good in medical education. These standards were held up, however, not as rigid requirements, but for their suggestive value, and the advances obtained were through the prompt and enthusiastic adoption of these standards by the majority of medical schools.

The changes in medical education since 1900 are such as could not be anticipated at that time. These changes, however, are but a parallel to the stupendous developments in other social and scientific fields. Indeed, the last twenty-five years have witnessed scientific developments such as have no parallel in all previous ages. Instead of the old candle-dip and the oil lamps, our homes are now brilliantly lighted with electricity. In transportation, the ox-cart, the saddle horse, the four-wheeler, and the horse-drawn street-cars have given way to the more rapid transit of electric street-cars and interurban trains. The modern boulevards and highways, the automobile, the movies, airplanes, and other improvements during the last twenty-five years have brought about marvelous and unprecedented changes in social and economic conditions. So also have our medical schools developed from the single lecture-room institution in many instances to the great campus with its multitude of medical buildings and hospitals. From only one or less full-time expert laboratory teachers on the average, there are now twenty or more in each institution. These changes have taken place in an amazingly short space of time. The skeleton structure of the greater medical teaching institution has been completed; now is the time to make the very essential internal developments and modifications.

Most prominent among the improvements in medical education is the fact that now 80 per cent are integral parts of high grade, reputable universities, and these are enforcing, with fair rigidity, an entrance requirement of two or more years of college work. There is no longer need for several of the requirements still retained in state medical practice laws, which were highly important under the chaotic conditions existing twenty-five years ago. Certain standards, indeed, are still essential, but these should not be so minutely detailed as to prevent the further essential progress in medical education. Nor should they be such as will cause an extreme hardship, if not an actual injustice, to certain exceptional students.

Responsibility for the essential changes in medical education belongs properly to and can be safely left with the officers of the medical schools. In this development, as Dr. Wilbur well points out, the student should have the chance to do for himself rather than to have so much done for him. There should be a larger provision for optional or elective courses, and the actual schedule of hours should be reduced sufficiently to allow the student to properly master the subjects to which he is assigned. These subjects, furthermore, should not only be limited to the essen-

tials of the medical training, but also should be correlated so that as principles are learned they may also be applied in the care of patients in dispensary and hospital.

At present there appears to be a tendency to deprecate the changes brought about in medical education and to forget the utter lack of standards and the chaotic conditions existing twenty-five or more years ago. *Let us not go too far in this deprecation, but rather look with thankfulness on the great improvements made and continue to strive until conditions which are still unsatisfactory have been corrected.* The steadfast purpose of medical education is to provide for humanity the best possible medical service.

Frederick C. Zapffe, Secretary Association of American Medical Colleges—As for Dr. Wilbur's paper, as a whole, I am in full accord with most of the points made, but being given the opportunity to comment on the situation generally, I shall endeavor to do so.

Most discussants seem to overlook the fact that many of the undesirable features connected with medical education today are the result of evolution. The same is true of standards. It is only comparatively recent that anyone not connected with a medical school or a state licensing board took any interest in medical education. Even the administrative officers and executives of universities that had integral medical schools apparently were only too willing to leave medical education in the hands of the medical faculty or those few in the faculty who took an interest in it. Therefore, the present-day awakening of the university officials is gratifying, although not all of them seem to grasp the full significance of everything that has been done. This statement is based wholly on the results of personal contact with university executives. As one who has been in intimate touch with this work for more than twenty-five years, I have had opportunity to see and observe. *I am convinced that much progress has been made; that the situation is becoming better year after year; that eventually enough responsible persons will become interested in medical education to work out its future and be in a position to meet new problems as they arise, and new ones arise every year.* I do not believe in fixed rigid standards, although I am convinced that we must have standards which shall serve as a starting point. If I had to set the standard for admission to medical schools, it would be based entirely on knowledge possessed and mental fitness, and not on semester hours or credits. That system is a most pernicious one and wholly detrimental to every form of education.

It is equally as bad as the antiquated requirements laid down by state examining boards because of state laws enacted many years ago that the applicant for medical licensure must have attended four annual sessions in four calendar years, making it impossible to carry on teaching in the medical school in any other way—except by subterfuge, although I do not mean to say that such a thing is being done. The pre-medical requirement can easily be fulfilled by any ambitious youngster who applies himself and puts in the required hours and secures the needed credits. That does not, however, signify

that he is fitted to enter on the study of medicine. Dr. Wilbur's suggestion to make mental tests part of the admitting machinery certainly would help tremendously to straighten out matters in this direction.

Many errors have been corrected; others will be corrected in the near future. After about ten years of deliberation and study, the present medical curriculum was evolved. It is a good curriculum, but it is not yet being enforced sufficiently well. Its greatest advantage is that it is not in any sense rigid. On the contrary, it is exceedingly elastic—and it is aimed entirely to make good doctors of medicine, not specialists—a job that should be relegated to the post-graduate schools. A recent review of medical school curricula made by me and reported on at the recent meeting of the Association of American Medical Colleges showed that much remains to be done before all the medical schools will take this so-called standard curriculum and adapt it to their particular facilities. *Whenever more co-operation is evinced between the various departments of medical schools, the hospitals, the state licensing boards and all agencies concerned in education, medical and otherwise, a more perfect curriculum will be evolved.* Why should state laws stand in the way of better medical teaching? Why should the state of mind of hospital trustees and superintendents stand in the way of better medical teaching?

Medical education is not for the individual. It is for the community. It is a part of the large educational movement in which laymen, as well as professional men, are interested because the end sought is better health. Co-operation, leaving the final working out of any plan to those most concerned with it, is what is needed at this time. Much co-operation must come from medical teachers and educators. The latter must realize that while pedagogic principles must prevail, only the medical teacher can apply these principles to medical teaching. And the medical teacher should realize, more than he does now, that he must do more real teaching which will fit the medical student for the practice of medicine. We can learn only from research; we must have research; we should do everything to foster research and to encourage men fitted for it to go into research; but what we need more than that, even at this time, is more teachers—men who are willing to devote themselves to teaching rather than to research; men who are sufficiently well trained to get all there is to get out of research and work over the result for presentation to the student.

There never can be given to teaching all the time needed to teach everything; nor is it possible to teach everything, because what is new today is old tomorrow and discarded the next day. But the present medical curriculum is an admirable one for the teaching of principles which will make it possible for the young graduate to continue his studies and become a really good practitioner. Let the hospital people, the State Board of Examiners, and the medical school people get together and work out a plan, regardless of fixed and set state laws, entirely on an educational basis. The men engaged in this work can be trusted to do the right thing, because they are well grounded in the essentials of the job. They

know what is needed and they know what should be done to meet the needs of the situation. It is not a difficult job; on the contrary, it is comparatively easy of accomplishment if all the people concerned in it will get together and make an honest effort to work it out on the basis of needs, and not fixed standards.

J. S. Rodman, M. D., Secretary National Board of Medical Examiners—Nearly everyone will agree that, as necessary as it was to fix and maintain rigid standards of medical requirements in the years just gone by, the need for such a rigid standard has now passed. The pendulum, however, must not be allowed to swing too far backward, as it is so apt to do in any reaction. All of us thoroughly appreciate why the law back of the State Board of Medical Examiners found it necessary to safeguard such a vital matter as public health when there were over twice the number of medical schools turning out graduates as there is today. That most of these schools graduated a poorly equipped product is also well known. Much good has come, therefore, from these standards that are now, as Dr. Wilbur says, "squeezing out the life juices of intellectuality and initiative"; and good also has come from making of the study of medicine a part of the academic life of a university in recent years. We believe, however, that the safeguarding of public health is so vital a matter to the whole people that it should never be entirely free from the necessity of one's demonstrating the ability to apply the knowledge acquired in undergraduate years before being publicly declared fit for this greatest of responsibilities. We also believe that, while the majority of the medical schools existing today should be allowed a free hand in determining just how this training should be given, the product should still be judged by the measuring stick of one common standard.

This conviction has become firmly fixed with the writer after an experience of several years in examining the graduates of most of the medical schools of this country. It is inevitable, if these schools are to enjoy even greater latitude than they now do, that some of the graduates of each of them will find some subjects more interesting than others and thus slight one or more, a thorough knowledge of which is necessary to make a safe practitioner and that, of course, is the chief aim of a medical training.

Unquestionably, too much fixed instruction is now crowded into the undergraduate curriculum, and much that is now crammed into the medical student should be taught in graduate schools. Ideally there should be an "irreducible minimum" established for one to thoroughly master before being declared fit to practice medicine. Who shall set this irreducible minimum? We believe that such will come, but only through the rather tedious evolution that we are now following of free discussions of this problem by the Association of American Medical Colleges, the Council on Medical Education of the American Medical Association and others interested.

We believe that it is a matter of concern only to the medical schools themselves just how "this irreducible minimum" shall be taught; that the proper way to accomplish this end does not mean a rigid

adhering to a fixed schedule of scholastic hours, days, months, semesters and years, but that an impartial judgment should be passed on the product of such training after a thorough and searching examination into one's ability to actually demonstrate that such a training has provided this "irreducible minimum." We also believe that such qualification is best provided by one being required to show this evidence of fitness before an examining board which has the same standard for this entire country.

William Ophuls, M. D., Dean of Stanford University Medical School, San Francisco—I have read President Wilbur's address, "Maintaining Standards Without Excessive Standardization," with the greatest interest, and fully agree with him that it is foolish to let standards supplant ideals. The universities should be in a position to develop their teaching in any direction with perfect freedom and according to their best ideals, and should not be hindered in their natural development by a lot of burdensome and often unnecessary regulations. There must, however, be some control by the state relative to the entrance of university graduates to the professions, but this control should be exercised with tact and discretion and with an open mind to possible improvements in the future. What applies to all professions naturally also applies to the medical profession. *Among all others, the medical profession is the one most difficult to regulate, and judging by the protests which we hear from all sides, it is also the worst regulated one of all of them.* This is true not only with us, but practically all over the world. I need not discuss here the inherent difficulties in an attempt to control all those who wish to practice the healing art in one way or another, but the question immediately before us is, what shall be done in the case of those who have received a degree of doctor of medicine from well-recognized educational institutions like a real university. It seems a waste of time to re-examine these men after the strict examination which they have already gone through, and what is more important, the state board examinations may interfere with the proper education of the student if they insist, for instance, too much on book knowledge and give the student no opportunity to display those parts of his training which really make for future success in his profession. Such exactions may lead to slighting on the part of the students of matters of real importance in order to acquire the knowledge required to pass his state board examinations. Two remedies may be found for this situation: either the state boards may accept the examinations conducted by such institutions as equivalent to their own and admit these applicants on a "reciprocity" basis,* or they might appoint the university teachers as members of special boards of examiners who would conduct the examination for state license under the board's supervision. In the latter case the question would arise whether it would not be best to refer all candidates applying for license and to be examined to the university examining boards established in this way and distribute them among the examin-

* Such reciprocity might be established also with university medical schools outside of the state.

ing boards if there are more than one first-class university medical school in the state.

This would throw a considerable extra burden on the examiners among the university faculties, and the task should not be undertaken by them lightly on account of the real hardships connected with it, as is shown by the experience in countries where this custom prevails—for instance, in Germany. These examiners certainly should receive adequate compensation from the state for this additional work.

The boards of examiners would retain the general supervision over the medical schools in their states, but any too detailed requirements in regard to subjects taught and time spent on them should be eliminated. The boards would continue to pass on all credentials and would grant a license only when they had thoroughly satisfied themselves that the candidates actually have conformed with all general requirements in regard to the practice of medicine which the law may contain.

The whole question is one of the greatest importance to the profession, to the teaching bodies, and particularly to the public at large. We should make all efforts to increase the esteem in which the medical profession is held by the public, and this can be done only by supplying the public with physicians of the highest character and with a training that improves at the same rate as we advance in our knowledge of the science and practice of medicine. Any changes in regulations should, therefore, be considered most carefully, with this fundamental point of view in mind.

L. S. Schmitt, M. D., Acting Dean University of California Medical School—President Wilbur has pointed out that quantitative standards have served a useful purpose, but today their need is not so essential as it was twenty years ago.

Nevertheless, in a large measure, we tell the high school student intending to study medicine what he *should* do, and the collegiate and medical student what he *must* do in order to receive a degree of Doctor of Medicine.

In addition, when the candidate is enrolled in the academic departments of a university, he is required to conform to certain rules and regulations concerning prerequisites, upper and lower division courses, major and minor subjects, etc.

These restrictions have built up a long narrow passage through which all must pass. No side trips or short-cuts are permitted, regardless of the personal equation. The candidate, also, must constantly bear in mind the various requirements of the several state examining boards.

In 1914, President Lowell of Harvard concluded an address before the Tenth Annual Conference of the Council on Medical Education, with the following statement:

"Let me repeat. I am not urging the admission to medical schools of men with an inadequate preparation, but I am arguing for a measure of that preparation which shall be a real test of a man's knowledge not solely of the courses he has been through, and which will not, for a failure to decide early on his career, keep out the man of power."

(J. A. M. A., Vol. LXII, No. 11, March 14, 1914.)

Eleven years later, throughout the entire course of medical education, the necessity for such a measure is just as great.

As a result of these conditions (1) students must make their choice of a calling early in their scholastic career; (2) well-prepared students suffering from excessive formalism are debarred from Medicine as a profession; (3) medical schools lack freedom in the preparation of their curricula; (4) all students are considered to have the same intelligence quotient and identical capacity; (5) students in medical schools are measured by the number of "units" they are able to acquire rather than by their retained knowledge and power to reason.

President Wilbur has suggested certain procedures, all pointing in the right direction. These suggestions should receive wide discussion before any attempt is made to change or amend present procedures. Changes such as these should be brought about by evolutionary rather than by revolutionary methods. Perhaps many could be gradually evolved by setting up, in the various states, some machinery to control the granting of charters to educational institutions and to oversee existing institutions.

In 1910, the Academic Senate of the University of California presented a memorial to the regents to the effect that a diploma in Medicine, Dentistry, or Pharmacy from the University of California should qualify the holder to practice Medicine, Dentistry, or Pharmacy in the state of California. At that time, it was not considered feasible to recommend this procedure, but the time has now arrived when standards may be maintained without excessive formalism.

Should a degree in a learned profession, granted by a reputable university, serve as a basis for permission to practice such profession, some authority should be maintained charged with the control of law enforcement and discipline. State universities should not be required to assume this function.

Universities may eventually be utilized as agents to set a test to determine one's capability to practice a profession. Other agencies may be granted authority to revoke this privilege if it is abused.

P. T. Phillips, M. D., President California Board of Medical Examiners—The evolution of medical education has been interesting. From the scientific standpoint it has been truly wonderful in the speed of its development and in the breadth of its field. From the practical standpoint, is it satisfactory? To my mind this is the whole question.

The scientific aspects of medical instruction are bound to increase with increased facilities for investigation and research. *Will the teaching faculties of our universities, now largely influenced by full-term men with no experience in actual practice, be able, with their vision, to sift the wheat of reality from the blinding chaff of uncertain theory?* There should be employed a sufficient number of teachers experienced in all the problems the M. D. meets, to supply a practical training in the homely duties of treating the afflicted. *Helping the young practitioner to a broader, more sympathetic attitude to-*

ward the patient and his troubles is as vital to successful practice as technical foundation. An appreciation of these duties has been overlooked and neglected for the more interesting scientific investigations. *In other words, we are becoming so technical that we do not appeal to the public who are not as yet universally educated to the necessity of scientific medicine.* Much unscientific practice flourishes on the basis of sympathetic appeal, and our training schools will fall short of their obligations if they fail to recognize this element in human nature.

I am optimistic enough to believe that in another generation or two scientific medicine and no other will be demanded. This will come as a result of our present-day propaganda of health discussions in the daily papers, our health journals, and our popular health lectures by capable men added to the results accomplished by the application of intelligent hygiene and treatment. Then the M. D. degree will need no protection by legislation. In the meantime we must be patient as well as progressive, training our young practitioners to cope with the situation as it actually is and not as we hope and expect it to be. Here we may discuss medical legislation in relation to medical teaching.

All laws are for the protection of the people. Until such a time as they are sufficiently educated to refuse what is not for their good in medicine, theoretically at least, the law must protect them. The theory is right, its practice falls short because laymen make the laws, and thus unscientific as well as scientific and sound methods are allowed and upheld. The answer: Proper education inside and outside the schools. This is the only way the M. D. degree will be appreciated and protected.

Boards of medical examiners are almost entirely composed of men who are in actual practice, and I do not believe their examinations are "unimaginative," but rather of a character to better measure the practical ability of the graduate than those of the theorist and technician of the medical faculty. Medical boards do not fix the standards. The provisions of the laws are based on the advice of our teaching institutions and organizations. The boards stabilize and do not standardize the work, and with the present conditions of teaching and practice, changing like spring bonnets from year to year, I think this stabilization is necessary. If the laws contain undesirable features interfering with proper teaching, change them. In a matter of this kind we usually find our legislators sympathetic and willing to take our advice.

Percy T. Magan, M. D., Dean College of Medical Evangelists, Los Angeles—The world-old problem, how to train our youth for the most efficient service in life, has recently burst into forked flames over the question of the education of medical students. In this connection, President Wilbur's address is at once constructive and conservative—two qualifications much needed in the present hour. It is reformatory without being revolutionary. In his arguments, he, as Theodore Roosevelt would say, is traveling along a radical road in a conservative way.

There is a disposition at the present time to ruthlessly and unqualifiedly condemn all that has been

so painfully built up in the realm of medical education during the last twenty years. There is a constant harking back to the "good old days of the country doctor." Personally, I have most profound misgivings as to whether they were good days in any sense of the word. They were days when no abdominal surgery was there to snatch the sufferer from the jaws of the grave. They were days before a Semmelweiss had conquered the horrors of puerperal fever. They were days in which no Lister lived to make the operating theater safe by sterilization and antisepsis. They were days preceding Koch's isolation of the germ of tuberculosis, by which he brought from ambush the most deadly weapon in all the armamentarium of death. They were days antedating the light which radiated from the life of the immortal Pasteur. They were days before the gentle soldier physician, Ronald Ross, had discovered that "little thing" which "a myriad men" has saved. Surely the processes of medical study, education and research of modern times have brought forth from the womb of mystery thousands of blessings to man and womankind. Nowadays it seems to be even popular to bless the past and curse the present. However, the highway of history would seem to reveal that such has been a favorite pastime in all ages, for Professor Gilbert Murray of Oxford tells us that one of the oldest documents known to man—a cuneiform fragment from the lowest, most ancient stratum of the ruins of Babylon—begins with these words, "Alas! alas! times are not what they were!"

No, the "good old days" were, methinks, not so good after all. The constant glorification of them by people who know a lot that isn't so brings to mind a quaint little anecdote of an Englishman who mourned to a North Briton, "I greatly fear the London Times is not nearly so well edited as it used to be." To which the canny Scot replied: "I hae mae doubts if it ever was." However, these folk who are so busy trying to reform everything that everybody else is doing seem to be worse than their ancestors in that, as General Booth of the Salvation Army once put it, "the priest and the Levite of the present day differ from their forebears, in that they not only pass by on the other side, but return and vigorously punch the head of any good Samaritan who attempts anything really worth while."

I have listened to and read much learned prattle of late that young men and women should be taken direct from high school and placed at once in the medical college without any pre-medical college training. Besides, it is further argued that the course in medicine need not exceed three years in length. In support of these contentions, it is urged that many a good doctor in an earlier day had no more than grammar schooling and a two years' medical course.

The fallacies of these proposals can be easily understood when the tremendous responsibilities of the present-day doctor are compared with those of his predecessors. *Compare, for instance, the responsibilities of the physician of some years ago and today in the case of acute appendicitis.* This disease was undiagnosed then, and there was no surgery for its relief. The patient got a pain; the doctor came

and talked about "inflammation of the bowels," and prescribed a cathartic and possibly some warm applications. If the patient got well, the doctor received praise he did not deserve. If he died, the Almighty got blamed for what he did not deserve. Take affections of the gall-bladder, which now call for cholecystectomy or cholecystotomy, as the case may be. In those days the doctor treated them much the same as he treated appendicitis, and with similar results. Or, think of carcinoma of the uterus. Well, the poor woman "had a lump," for which nothing could be done, and the ways of Providence in taking such a good mother away from her family were surely a mystery hard to be understood. Or, in the realm of internal medicine, when a person was stricken with diabetes, special diet might be resorted to, but that was all. In a case of cretinism, all the doctor had to do was to tell how sorry he was and prescribe plenty of wholesome food and fresh air. And so I might proceed *ad infinitum*. Nowadays, however, it is much more difficult for the doctor to lay his ignorance as a loving offering at the feet of the Eternal's Throne than it was in "the good old days." He must *know* whether the case is appendicitis, or intussusception, or gall-stones, or gastric ulcer, or what not. He must *know* how to differentiate correctly between all of these. He must *know* how to operate in each particular case, or he must know when the difficulty is beyond his power to do and have sense sufficient to take the patient to somebody else. He must know how to administer insulin and carry a most elaborate and scientific dietetic program along with his insulin therapy. He must know what thyroid or iodine will do for cretinism, and he must know it in a most precise, mathematical and scientific way. And if he does not know all these things theoretically and practically, he is very liable to find himself faced with most expensive damage suits, and un pitying publicity. Verily, there is no comparison between the doctor's responsibilities today and the responsibilities of those who trod his professional path in days of yore. And yet we are expected to teach him all of these things in the same length of time in which preceptors of by-gone days imparted their little stock of medical lore to those who sat at their feet.

I have all respect for the great work which the Council on Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges have done. To disparage the labors and achievements of these earnest men is just a case of punching the head of the Good Samaritan. We must remember that medical education is a legal even more than a medical question, and that the difficulties of honest reform are Herculean. It is true that there is danger of overstandardization. Our courses of study are not sufficiently flexible. But these things require not only wise experiment for their solution; they also require in the aggregate the expenditure of vast sums of money to secure their successful accomplishment. And on top of this a world of work educating legislators and laymen to amend or abrogate old laws is necessary. And, in the homely language of the Sunday-school boy when the teacher told him, "Johnnie, God can do everything," Johnnie blasphemously replied, "No, Miss Mary, He can't make a three-year-old

calf in a minute." Equally, all these things cannot be accomplished by the wave of a magic wand, as our idealistic friends seem to suppose.

Great reforms are being made all the time. By clinics in the first and second years in the medical course, the great gulf between the ancillary and the clinical years is being bridged. Our little school is endeavoring to work out the experiment of placing freshman and sophomore medical students in hospitals and other medical institutions during every other month of their medical course. They work as orderlies, aides, assistants, and technicians of one sort or another. In this way they are brought into a place where they absorb the patient's angle of vision, of the care and treatment he is receiving. They come into humble and intimate touch with him and with the women who are nursing him, and thus a better understanding of the viewpoint of the patient, of his relatives, and of the hospital is secured, and the student becomes possessed of a much more sympathetic and, may I say, spiritual knowledge of his patient's needs. We are hoping that this contact will have a tendency to neutralize the alleged haughtiness, uppishness, and lack of kindly feeling toward their patients with which doctors are being so freely charged at the present time. We hope it may help in impregnating the students with the quaint and deeply valuable philosophy of King Solomon: "Be not righteous overmuch; neither make thyself overwise; why shouldst thou destroy thyself?"

I do think that times are changed, and that the work of the Council on Medical Education is so firmly enwrought in the public conscience that we might now safely make some modifications in the powers of State Boards of Licensure. *It is possible that a plan might be worked out to examine the medical school rather than the medical student, and to trust the examination of the medical student to the medical school instead of the unmedical state.* In any event, the object of the state board examinations should be directed toward a plan designed to ascertain the capacity of a would-be practitioner to think and to do rather than to an examination of his powers of memory, which in many instances is about all a state board examination amounts to. In fact, some state board examiners remind me of what Lord Macaulay once said of the Dons of Oxford, that the greater their erudition, the denser their ignorance of what was really required of them. State board examiners need to imbibe the philosophy of the great Billroth: "The sum of the contents of memory at any moment is no measure of the capacity of a man. We forget much, but if we have practiced in a certain kind of thinking, it, like the ability to swim, will never be lost as long as we retain the full use of our mental powers."

"By the Term, 'Allied Sciences,' as applied to medicine, is meant those subdivisions of general science that are held by teaching institutions of standing and reputation conferring the degree of Doctor of Medicine to have a place in the professional education and training of a physician."

Since the number of medical schools has been greatly reduced, and the requirements for medical education have become more uniform, it is easier to determine whether medical schools are fulfilling all necessary requirements.—Federation Bulletin.